

ture upon fungi, his work stands out with conspicuous individuality. That he has apparently described, in some cases, species already described by older mycologists of Europe is no reflection upon his remarkable ability in the discernment of specific and generic characters of our native species.

His work will stand for all time as the foundation upon which later students of fungi may build with safety a more elaborate morphological and systematic revision of the fleshy and woody groups of fungi.

Those friends, admirers and fellow botanists who have contributed toward bringing into existence this testimonial exhibit of mushroom models may feel that there is no more suitable memorial possible. There are few pages of modern literature dealing with the fleshy and woody fungi that do not reflect in some degree the individuality of Doctor Peck's work, and looking at these models in the State Museum, with their exquisite variety of form and color, one may imagine with what pleasure and appreciation they would be viewed by him whom they memorialize.

THE WEIGHT OF SEEDS AS RELATED TO THEIR NUMBER AND POSITION

BY J. ARTHUR HARRIS

Professor Halsted's interesting paper under the above title in the June, 1917, number of *Torreyia* is well worthy of the consideration of those who, as he suggests, have the opportunity of investigating the internal factors influencing seed number and seed weight. Our knowledge of the physiology of seed production is very limited indeed. Much of the work which has been done has been based upon such small series of material that the conclusions are of little real value.

The question of the relationship between number of ovules formed, number of seeds developing, and position of seed in the pod in the garden bean, *Phaseolus vulgaris*, has received very detailed consideration.

Studies have been based on three dwarf varieties, Navy, Golden Wax and Burpee's Stringless.* It has been shown that the number of ovules laid down has a negligible influence upon seed weight. The weight of the seed decreases as the number of seeds per pod increases. The weight of the seeds also decreases as the percentage of the ovules which develop into seeds becomes larger. The biometrician expresses these results on a universally applicable correlation scale, ranging from -1 through 0 to $+1$. Since -1 would indicate a perfect negative correlation between number of seeds per pod and seed weight, the average value $-.096$ shows a very low relationship indeed. That for the relative number of seeds developed is even lower, measured by an average correlation coefficient of only $-.075$.

In beans, the chance of an ovule developing into a seed increases from the stem to the stigmatic end of the pod. Seed weight is also influenced by the distance from the base of the pod at which the seed is inserted. The twenty coefficients which have been worked out for groups of pods with various numbers of ovules range from $+.078$ to $+.238$. Thus from the base to the tip of the pods seed weight increases slightly. The rate of increase in seed weight seems in some cases to be sensibly uniform, but in others weight increases rapidly at first, then the rate of increase falls off, and finally the seeds become somewhat lighter at the stigmatic end of the pod.

In connection with Professor Halsted's suggestion concerning the desirability of investigating the problem of fertility and seed weight in wild plants, it is worth while to refer to results published in an earlier number of TORREYA.†

In *Staphylea* there is little difference between the average weight of the seeds in pods with 1 and 2 seeds per pod, but when more than these numbers develop the weight of the seeds is sensibly lowered.

* Harris, J. Arthur. A quantitative study of the factors influencing the weight of the bean seed. I. Intra-ovarial correlations. Beih. Bot. Centralbl. Abt. I, 31: 1-12. pl. 1-4, 1913. See also J. Arthur Harris, The influences of position in the pod upon the weight of the bean seed. Amer. Nat. 49: 44-47. fig. 1-3. 1915.

† Harris, J. Arthur. Seed weight in *Staphylea* and *Cladostriis*. TORREYA 11: 165-169. 1911.

In *Cladrastris* the mean weight of the seed is higher when only one seed is produced per pod than when the pod contains two or more. There is no essential difference between 2-seeded and 3-seeded pods. In series of pods containing 2-4 seeds the mean seed weight decreases from the proximal towards the distal positions.

Seed weight has also been studied with considerable thoroughness in *Crinum longifolium*.*

The weight of the large watery seeds of this species is far more variable than seed weight in general. The fact that there is a substantial correlation between the weight of the seeds of the same fruit indicates that all are subject to the influence of similar physiological factors.

NEWS ITEMS

Dr. and Mrs. Carl Skottsberg of Sweden, *en route* from Chili, are stopping in New York until the middle of November. After botanical work in Chili Dr. Skottsberg was going directly to Sweden, but war conditions made a stop in New York necessary. He attended the last two days of the Club's semicentennial program.

An account of the exercises in connection with the Club's fiftieth anniversary will appear in *TORREYA* for November. All of the meetings scheduled were held and there was an average attendance of fifty. About eighteen hundred dollars had been collected up to October 20 and the committee appeals for more subscriptions to enable it to publish all the papers read at the meetings.

Volume one number one of the *Journal* of the International Garden Club was issued September 26. It is a gardening paper of 285 pages and contains over 70 full page illustrations. Editorial or business matters relating to the new *Journal* should be sent to Norman Taylor, Brooklyn Botanic Garden, Brooklyn, N. Y.

* Harris, J. Arthur. Biometric data on the inflorescence and fruit of *Crinum longifolium*. *Ann. Rept. Mo. Bot. Gard.* 23: 75-99. 1912.